

WHAT IS CLAIMED IS:

1. A radio communication system comprising:  
a radio reception unit for receiving a radio  
signal, extracting a characteristic of the received  
radio signal, and converting the received radio signal  
into a reception signal; and

a reception signal processing unit for converting  
the reception signal into reception data on the basis  
of the extracted characteristic of the radio signal.

2. The system according to claim 1, wherein the  
radio reception unit comprises a receiver for receiving  
the radio signal, a radio signal characteristic  
extractor for extracting the characteristic of the  
received radio signal, and a reception radio signal  
converter for converting the received radio signal into  
the reception signal, and

the reception signal processing unit comprises a  
demodulator for demodulating the reception signal by  
selecting a demodulation scheme on the basis of the  
extracted characteristic of the radio signal, a  
reception communication protocol processing unit for  
executing a communication protocol process of the  
demodulated reception signal by selecting a  
communication protocol processing scheme on the basis  
of the extracted characteristic of the radio signal,  
and a decoder for decoding the reception signal, that  
has undergone the communication protocol process, by

selecting a decoding scheme on the basis of the extracted characteristic of the radio signal.

3. The system according to claim 2, wherein the reception radio signal converter converts the received radio signal into the reception signal by selecting a conversion scheme on the basis of the extracted characteristic of the radio signal.

4. The system according to claim 1, further comprising:

10 a transmission signal processing unit for converting transmission data into a transmission signal on the basis of the extracted characteristic of the radio signal; and

15 a radio transmission unit for converting the transmission signal into a radio signal, and transmitting the converted radio signal.

5. The system according to claim 4, wherein the transmission signal processing unit comprises an encoder for encoding the transmission data by selecting an encoding scheme on the basis of the extracted characteristic of the radio signal, a transmission communication protocol processing unit for executing a communication protocol process of the encoded transmission data by selecting a communication protocol processing scheme on the basis of the extracted characteristic of the radio signal, and a modulator for modulating the transmission data, that has undergone

the communication protocol process, by selecting a modulation scheme on the basis of the extracted characteristic of the radio signal, and

5       said radio transmission unit comprises a transmission radio signal converter for converting the modulated transmission data into a radio signal, and a radio transmitter for transmitting the converted radio signal.

10       6. The system according to claim 5, wherein said transmission radio signal converter converts the modulated transmission data into the radio signal by selecting a conversion scheme on the basis of the extracted characteristic of the radio signal.

15       7. An electronic apparatus with a radio communication function, comprising:

      a radio reception unit for receiving a radio signal, extracting a characteristic of the received radio signal, and converting the received radio signal into a reception signal; and

20       a reception signal processing unit for converting the reception signal into reception data on the basis of the extracted characteristic of the radio signal.

25       8. An apparatus according to claim 7, wherein said radio reception unit comprises a receiver for receiving the radio signal, a radio signal characteristic extractor for extracting the characteristic of the received radio signal, and

a reception radio signal converter for converting the received radio signal into the reception signal, and

the reception signal processing unit comprises a demodulator for demodulating the reception signal by  
5 selecting a demodulation scheme on the basis of the extracted characteristic of the radio signal, a reception communication protocol processing unit for executing a communication protocol process of the demodulated reception signal by selecting a  
10 communication protocol processing scheme on the basis of the extracted characteristic of the radio signal, and a decoder for decoding the reception signal that has undergone the communication protocol process by selecting a decoding scheme on the basis of the  
15 extracted characteristic of the radio signal.

9. The apparatus according to claim 8, wherein said reception radio signal converter converts the received radio signal into the reception signal by selecting a conversion scheme on the basis of the  
20 extracted characteristic of the radio signal.

10. The apparatus according to claim 7, further comprising:

a transmission signal processing unit for converting transmission data into a transmission signal  
25 on the basis of the extracted characteristic of the radio signal; and

a radio transmission unit for converting the

transmission signal into a radio signal, and  
transmitting the converted radio signal.

11. The apparatus according to claim 10, wherein  
the transmission signal processing unit comprises an  
5 encoder for encoding the transmission data by selecting  
an encoding scheme on the basis of the extracted  
characteristic of the radio signal, a transmission  
communication protocol processing unit for executing a  
communication protocol process of the encoded  
10 transmission data by selecting a communication protocol  
processing scheme on the basis of the extracted  
characteristic of the radio signal, and a modulator for  
modulating the transmission data, that has undergone  
the communication protocol process, by selecting a  
15 modulation scheme on the basis of the extracted  
characteristic of the radio signal, and

the radio transmission unit comprises a  
transmission radio signal converter for converting the  
modulated transmission data into a radio signal, and a  
20 radio transmitter for transmitting the converted radio  
signal.

12. The apparatus according to claim 11, wherein  
said transmission radio signal converter converts the  
modulated transmission data into the radio signal by  
25 selecting a conversion scheme on the basis of the  
extracted characteristic of the radio signal.

13. A semiconductor integrated circuit device for

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a radio signal characteristic extractor for

a reception radio signal converter for converting the received radio signal into a reception signal.

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a radio transmitter for transmitting the converted radio signal.

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a demodulator for demodulating a reception signal

by selecting a demodulation scheme on the basis of an extracted characteristic of a radio signal;

5 a reception communication protocol processing unit for executing a communication protocol process of the demodulated reception signal by selecting a communication protocol processing scheme on the basis of the extracted characteristic of the radio signal; and

10 a decoder for decoding the reception signal, that has undergone the communication protocol process, by selecting a decoding scheme on the basis of the extracted characteristic of the radio signal.

18. The device according to claim 17, further comprising:

15 an encoder for encoding transmission data by selecting an encoding scheme on the basis of an extracted characteristic of a radio signal;

20 a transmission communication protocol processing unit for executing a communication protocol process of the encoded transmission data by selecting a communication protocol processing scheme on the basis of the extracted characteristic of the radio signal; and

25 a modulator for modulating the transmission data, that has undergone the communication protocol process, by selecting a modulation scheme on the basis of the extracted characteristic of the radio signal.

19. The device according to claim 18, further

comprising:

a receiver for receiving the radio signal;

a radio signal characteristic extractor for  
extracting a characteristic of the received radio  
5 signal;

a reception radio signal converter for converting  
the received radio signal into the reception signal;

a transmission radio signal converter for  
converting the modulated transmission data into a radio  
10 signal; and

a radio transmitter for transmitting the converted  
radio signal.

20. The device according to claim 19, wherein the  
reception radio signal converter converts the received  
15 radio signal into the reception signal by selecting a  
conversion scheme on the basis of the extracted  
characteristic of the radio signal, and

the transmission radio signal converter converts  
the modulated transmission data into the radio signal  
20 by selecting a conversion scheme on the basis of the  
extracted characteristic of the radio signal.

21. A radio communication method comprising the  
steps of:

receiving a radio signal;

25 extracting a characteristic of the received radio  
signal from the received radio signal;

converting the received radio signal into



a reception signal by selecting a conversion scheme on the basis of the extracted characteristic of the radio signal;

5 demodulating the reception signal by selecting a demodulation scheme on the basis of the extracted characteristic of the radio signal;

10 executing a communication protocol process of the demodulated reception signal by selecting a communication protocol processing scheme on the basis of the extracted characteristic of the radio signal; and

15 decoding the reception signal, that has undergone the communication protocol process, by selecting a decoding scheme on the basis of the extracted characteristic of the radio signal.

22. The method according to claim 21, further comprising the steps of:

20 encoding a transmission signal by selecting a conversion scheme on the basis of an extracted characteristic of a radio signal;

executing a communication protocol process of the encoded transmission signal by selecting a communication protocol processing scheme on the basis of the extracted characteristic of the radio signal;

25 modulating the transmission signal, that has undergone the communication protocol process, by selecting a modulation scheme on the basis of the

extracted characteristic of the radio signal;

converting the modulated transmission signal into  
a radio signal by selecting a conversion scheme on the  
basis of the extracted characteristic of the radio

5 signal; and

transmitting the radio signal.

23. A radio communication system comprising:

10 a radio reception unit for receiving a radio  
signal, extracting a characteristic of the received  
radio signal, and converting the received radio signal  
into a reception signal;

15 a modem/baseband reception/transmission signal  
processing unit for executing a reception signal  
process of the reception signal by selecting a  
reception signal processing scheme on the basis of the  
extracted characteristic of the radio signal, and  
converting transmission data into a transmission signal  
by selecting a transmission signal processing scheme on  
the basis of the extracted characteristic of the radio  
20 signal; and

a radio transmission unit for converting the  
transmission signal into a radio signal, and  
transmitting the converted transmission signal.

25 24. The system according to claim 23, wherein the  
radio reception unit comprises a receiver for receiving  
the radio signal, a radio signal characteristic  
extractor for extracting a characteristic of the

received radio signal, and a reception radio signal converter for converting the received radio signal into the reception signal,

the reception radio signal converter converts the  
5 received radio signal into the reception signal by selecting a conversion scheme on the basis of the extracted characteristic of the radio signal,

the radio transmission unit comprises a  
transmission radio signal converter for converting the  
10 modulated transmission data into a radio signal, and a radio transmitter for transmitting the converted radio signal, and

the transmission radio signal converter converts  
the modulated transmission data into the radio signal  
15 by selecting a conversion scheme on the basis of the extracted characteristic of the radio signal.

25. An electronic apparatus with a radio communication function, comprising:

a radio reception unit for receiving a radio  
20 signal, extracting a characteristic of the received radio signal, and converting the received radio signal into a reception signal;

a modem/baseband reception/transmission signal processing unit for executing a reception signal  
25 process of the reception signal by selecting a reception signal processing scheme on the basis of the extracted characteristic of the radio signal, and

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converting transmission data into a transmission signal by selecting a transmission signal processing scheme on the basis of the extracted characteristic of the radio signal; and

5           a radio transmission unit for converting the transmission signal into a radio signal, and transmitting the converted transmission signal.

26. The apparatus according to claim 25, wherein the radio reception unit comprises a receiver for  
10           receiving the radio signal, a radio signal characteristic extractor for extracting a characteristic of the received radio signal, and a reception radio signal converter for converting the received radio signal into the reception signal,

15           the reception radio signal converter converts the received radio signal into the reception signal by selecting a conversion scheme on the basis of the extracted characteristic of the radio signal,

20           the radio transmission unit comprises a transmission radio signal converter for converting the modulated transmission data into a radio signal, and a radio transmitter for transmitting the converted radio signal, and

25           the transmission radio signal converter converts the modulated transmission data into the radio signal by selecting a conversion scheme on the basis of the extracted characteristic of the radio signal.

27. A semiconductor integrated circuit device for a radio communication, comprising:

a demodulator/baseband reception signal processing unit for executing a reception signal process of a reception signal by selecting a reception signal processing scheme on the basis of an extracted characteristic of a radio signal; and

a modulator/baseband reception signal processing unit for executing a transmission signal process of a reception signal by selecting a transmission signal processing scheme on the basis of the extracted characteristic of the radio signal.

28. The device according to claim 27, further comprising:

a receiver for receiving the radio signal;  
a radio signal characteristic extractor for extracting a characteristic of the received radio signal;

a reception radio signal converter for converting the received radio signal into the reception signal;

a transmission radio signal converter for converting the modulated transmission data into a radio signal; and

a radio transmitter for transmitting the converted radio signal.

29. The device according to claim 28, wherein the reception radio signal converter converts the received

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of the extracted characteristic of the radio signal;  
and

transmitting the radio signal.